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Industrial Policy in Developing Countries[1]

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Traditionally, proindustry policies were associated with incentives for import substitution and an inward-oriented development strategy. This is no longer so. Whereas in the past, world-market orientation was seen as implying reliance on primary production, today policies favoring international competition and export orientation are considered compatible with policies favoring rapid industrialization. Differences of opinion on the appropriate degree of public intervention remain. The debate between "purist" laissez-faire advocates and those who believe in industrial planning, public investment, and generous subsidies often obscures the real need for reduction in antiexport bias, rationalization of incentives, and reform of public-sector activities. *J. Comp. Econ.*, Dec. 1984, **8**(4), pp. 436–451. The World Bank, Washington, D. C. 20433. © 1984 Academic Press, Inc.

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1. INTRODUCTION AND HISTORICAL PERSPECTIVE

In the period following the Second World War, structural change in favor of industry was viewed as a necessary prerequisite for modernization and growth in most, if not all, developing countries. The primary objective of their industrial policy was to speed up the process of industrialization in order to achieve levels of industrial development that were comparable with those in Europe and North America. Simplifying, one can think of a prototype developing economy in the 1950s producing two tradeables, agricultural and/or primary commodity products (40–50% of value-added), and industrial products (5–10% of value-added), and nontradeables (40–55% of value added). The huge difference in the role and importance of

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industry in developing countries as compared to its role and importance in the advanced economies was seen as the key manifestation of backwardness and the legacy of colonial times. A major objective of development strategy was to increase the share of industry to 15 or 20% of total value-added. Industrial policy in that context was a set of policy measures and government actions designed to shift more resources into industry, either directly through the budget and/or credit-allocation process, or more indirectly through the incentive system as determined mainly by tariffs, quantitative trade restrictions, and exchange rate management.

In establishing the policy environment within which industrial development would take place, policymakers in the developing countries were concerned with three interrelated sets of issues: first, the appropriate degree of competition, both internal and external, to which industrial activities should be exposed during the process of structural change; second, the extent to which market-allocation mechanisms could be relied upon to achieve the necessary levels of industrial investment and the desired degree of diversification of industrial activity; and third, the extent to which industrial development should be based on foreign as opposed to domestic investment.

Trade policy proved to be the most convenient tool at the disposal of governments for managing the degree of external competition faced by industrial producers. During the first phase of industrialization, the entire industrial sector was considered to be an "infant" sector in most developing economies. The infant-industry argument, which had guided trade policy in the United States and other developed economies in the 19th century, was applied to the industrial sector as a whole. High protective barriers were created behind which industry grew as an import-substituting activity oriented toward the domestic market, while agriculture and other primary production and, at times, foreign-capital and -aid flows provided the foreign exchange needed to pay for imports.

Relatively little attention was given during the early stage of industrialization to the costs of generalized protection. Policymakers accepted the view that the initial costs of production of many activities would exceed the cost of competing imports, but the level of the cost differential was thought to be modest; they expected that the duration of this situation was unlikely to be excessive.

Although trade policy was almost universally adopted as a means of controlling external competition, there was considerably greater variation in the attitude of LDC governments toward managing competition within the protected industrial sector. The degree to which governments employed instruments to direct investment and to regulate the number of entrants into individual branches of industry was in large measure an outgrowth of the extent of their belief in the efficacy of market forces in allocating

investment and ensuring cost discipline. Policymakers and economists in many of the developing countries had a profound suspicion of the ability of the market to generate and allocate investment effectively. In addition there was a widespread belief that the income-distributional consequences of unregulated capitalist development would be unacceptable. While the importance of income-distribution considerations varied, they tended generally to reinforce antimarket attitudes.

These factors gave rise to a major emphasis on planning and the role of the state in guiding industrial development. National plans were viewed as an essential weapon in the war on economic backwardness. Between 1940 and 1965 seventy-seven of the 90 low- and middle-income countries elaborated one or more development plans, most of which set targets for industrial investment and output growth, and many of which attempted to guide the sectoral composition of industrial output. LDC governments employed three major policy tools in the attempt to guide industrial development within the domestic market—direct public investment in public and parastatal (semipublic and quasipublic) enterprises; licensing of private industrial activities; and the establishment of industrial-development banks.

Public ownership of the industrial sector via both the nationalization of existing industries and new investment expanded rapidly in many developing countries in the 1950s and 1960s. The motivations behind the drive for public-sector investment were basically two. In the low-income countries of Africa there was a widespread view that market incentives, even in a highly protected trading environment, would not generate sufficient entrepreneurial response to meet the perceived need for growth of an indigenously owned industrial sector. In these circumstances it was argued that the state should act as entrepreneur and should invest across the entire range of industrial activities. In much of Asia and Latin America there was little concern over lack of entrepreneurship. Public enterprises were seen, more conventionally, as a mechanism for guiding investment into key industrial sectors (normally producers' intermediates and capital goods) in which private investment was seen as insufficient or undesirable. In other sectors public investment was viewed as a mechanism for balancing the interests of consumers with the objective of industrial development by moderating the rents obtained by producers from the structure of protection. Thus in sectors with significant scale economies, public enterprises were frequently granted monopoly positions coupled with price control.

The attempt to control private and foreign investment rested mainly on industrial-licensing mechanisms, often called industrial-development acts or investment codes, which set out the terms and conditions under which nonpublic investments were to be undertaken. The great majority of these acts were regulatory in spirit, vesting in the bureaucracy substantial discretion

over private investment. Administrators in the developing countries frequently used their discretionary powers to limit private investment in activities that were competitive with public industrial enterprises and to control the extent and terms of direct foreign investment. The extent to which industrial licensing was used to regulate competition depended in large measure on the attitude of individual governments toward the ability of the market to enforce cost discipline and efficiently select investments. In automobile production, for example, two distinct patterns arose in the 1960s. In countries such as Chile, Thailand, and Indonesia, licensing authorities permitted a wide variety of producers to establish assembly plants operating at low volume. The rationale underlying this option was that competition among producers would eventually weed out the least efficient operations and reduce the number of competitors. In countries such as Egypt, Yugoslavia, and India, on the other hand, the number of assemblers was severely restricted from the outset on the argument that the minimum efficient scale of assembly operations necessitated highly restrictive licensing practices. It is important to note, however, that in both cases producers were given extensive protection from external competition.

An important challenge during this first phase of industrialization was to encourage long-term investments. A key characteristic of modern economic activity, as opposed, for example, to traditional agriculture, is the potential for generating high economic returns by long-gestation investment projects. In most developing economies the lack of experience, political instability, and the nature of financial markets militated against long-term investments. With investment very dependent on imported capital goods, there was a basic need for long-term foreign-exchange credit. It was to overcome this obstacle that special "industrial-development banks" were set up with the mandate of providing long-term foreign-exchange loans, particularly to the private sector and to medium- and small-scale industries.

The industrial-development banks were the primary channel through which long-term credit from bilateral and multilateral donors and financial institutions were made available to the private sector. The type of expertise required of industrial-development banks in project identification and evaluation was not widely available in the developing economies which they served, and a major contribution to the early history of the development-banking system, as well as a preoccupation of the international donors, was the creation of expertise in these areas.

2. THE CHANGING POLICY ENVIRONMENT

Starting in the mid-1960s a number of countries emerged from the first phase of industrialization and their situation changed significantly. Table 1 illustrates the closing of the gap in industrial development between developed

TABLE 1
SHARE OF GDP ORIGINATING IN MANUFACTURING

	Manufacturing as a percentage of GDP	
	1960	1977
Low income countries	11.5	13.3
Middle income countries	20.6	23.2
Industrialized economies	30.6	27.0
U.S.	28.6	24.2
Japan	34.3	29.6 (1976)

Source. World Bank, *World Tables,* 1976, 1981.

and developing countries. In 1960 the middle-income countries, taken as a group, had reached a level of more than 20% of GDP originating in manufacturing, contrasted with approximately 30% in the industrialized countries. By 1977 the gap in relative shares of manufacturing had further closed to 23 and 27% for middle- and upper-income countries, respectively.

In countries such as Brazil, Mexico, Turkey, Pakistan, and India, to name some of the most important ones, the size and degree of differentiation reached by the industrial sector made it difficult to consider the whole sector as an infant industry. The explicit and implicit resource cost of protecting and subsidizing the industrial sector *as a whole* had become unbearable. Traditional export revenues and foreign-capital flows were insufficient to cover the growing import needs of industry and the demands related to infrastructure and urban development. The need for generating an exportable surplus of manufactured goods emerged as a very important requirement for sustained growth without a balance-of-payments crisis. In this context it became clear that the infant-industry argument had been applied to "infant" import-substituting activity but not to infant export industries. On the contrary, the latter had suffered from the antiexport bias of the incentive structure which was reinforced by chronic overvaluation of exchange rates.

Numerous studies carried out during the 1970s demonstrated the antiexport bias in the incentive systems of most developing economies by use of effective-protection and domestic-resource cost-measurement methodologies.[2] On the basis of these studies, it was documented that many existing and/or potential industrial activities were in fact suffering from *negative*

[2] Three important contributions to this literature summarize the results: Little et al. (1970); Balassa and associates (1982); and Krueger (1978).

protection while others received very high levels of protection. The eagerness to encourage the easier steps of import substitution had led to disincentives affecting the development of a number of intermediate-goods and capital-goods industries and, most importantly, export industries. Moreover, there was increasing realization that the costs of generalized protection and domestic-market orientation were not only static, in the sense that costs of production exceeded world prices, but could also have adverse long-term effects as closed-trade regimes frequently exhibited low rates of productivity change and technological progress in industry, relative to the advanced countries and to their more outward-oriented counterparts.[3] The infant industry argument, when applied to industry as a whole, was not borne out by the facts.

In the 1970s there remained substantial "rear-guard" resistance from those favoring import substitution and domestic-market-oriented policies. Mexico and Indonesia, for example, embarked on ambitious programs of import substitution supported by burgeoning oil revenues. But to the extent that being "pro-export" no longer meant being "anti-industry," the terms of the debate shifted. A fundamental change occurred: policies favoring world-market and export orientation are today viewed as compatible with policies favoring rapid industrialization, whereas in the past world-market orientation meant reliance on agriculture and other primary-goods-producing activities. In the early 1980s, a consensus has emerged on the need to correct the antiexport bias in the incentive structure; it is increasingly accepted that the semi-industrial developing economies should emphasize rapid development of manufactured exports in their basic development strategy.

Reflecting these developments, the debate on industrial policy in the semi-industrial developing economies is becoming somewhat closer in nature to the debate on industrial policy in the advanced economies. It is no longer feasible to protect, subsidize, or otherwise encourage the entire industrial sector. An interventionist policy now implies the need, in one way or another, to be selective. Moreover, there are now "old" industries in the "newly" industrializing countries. The steel industry, petrochemicals, and shipbuilding have been hard hit by the rise in energy costs and the world recession. Textiles, clothing, and footwear face competition from other LDC producers. The need for restructuring and some retrenchment, which also characterizes large segments of industry in the OECD economies, is present in many of the more advanced developing economies. The questions surrounding the physical and financial restructuring that these

[3] See, for example, Nishimizu and Robinson (1983) for a comparative study of total factor-productivity growth.

industries require, are relevant in Brazil, Korea or Portugal, and not only in the U. S., France, or Italy.

Despite the growing similarities, the context in which one can describe and analyze industrial policy in developing countries is still quite different from that characterizing the U. S., Western Europe, or Japan. First, although the relative size of the industrial sector in the middle-income countries has grown to approximate that in the industrial nations, there are a substantial number of low-income countries in which the process of structural transformation is still at an early stage. This is illustrated in Table 1 by the fact that the gap in manufacturing shares in GDP between low- and middle-income countries in 1977 was almost as large as this gap is between the middle-income and industrialized countries in 1960. Moreover, the gap is widening. Thus, a large number of developing countries remain at low levels of industrial development; the primary goal of their industrial policy continues to be to increase the relative (and absolute) size of the industrial sector.

Second, in the overwhelming majority of cases the industrial sector is very young, with significant industrial activity dating back at most 50 years, compared to about 200 years in the advanced Western economies and about 100 years in Japan. Substantial scope for learning and mastery of technology, therefore, exists in many LDC industrial sectors relative to those of the more advanced countries. This may have important implications for the design of policies to foster productivity change and the acquisition of technological capability.

Third, in developing countries publicly owned enterprises account for a much greater percentage of value-added than in the advanced market economies (see Table 2). The outgrowth of this policy of public investment has important implications for the role of the state and the scope of government intervention.

3. THE TERMS OF THE DEBATE IN THE 1980s

As is the case in the advanced economies, it is possible to distinguish two basic conceptual positions on industrial policy in the newly industrializing economies. The *laissez-faire* position is based on the belief that decentralized markets, imperfect as they may be, should be relied on exclusively to allocate resources to various industrial subsectors and firms, and that the central authorities should not attempt to favor particular subsectors or firms over others or otherwise be actively concerned with trying to influence the structure of industry. The *interventionist* position, on the contrary, holds that the government should play an active role and, in one way or another, promote a particular industrial structure and/or influence the development

TABLE 2

SHARE OF THE PUBLIC SECTOR IN TOTAL MANUFACTURING VALUE-ADDED (PERCENT)

Low-income countries	
Bangladesh	70.6 (1977/78)
Pakistan	84.0 (1975)
Senegal	21.1 (1974)
Sri Lanka	64.3 (1976)
Tanzania[a]	33.6 (1978)
Middle-income countries	
Algeria	74.9 (1978)
Egypt	66.7 (1981/82)
Iraq	41.5 (1975)
Korea[a]	15.1 (1972)
Mexico	29.8 (1975)
Panama	3.7 (1977)
Syria	57.6 (1977)
Thailand	6.5 (1979)
Turkey	47.3 (1972)
Zambia[a]	51.0 (1977)
Industrialized countries	9.6 (1975)

Source. UNIDO Secretariat, "Changing Role and Function of the Public Industrial Sector in Developing Countries," 10/81.

[a] Share of manufacturing GDP.

path of industry. While the distinction between these two positions is not as simple or as extreme in practice, it is nevertheless useful to conceptualize the debate in this form.

In practical terms the laissez-faire position translates into a recommendation to achieve equal effective protection, or more generally, equal net incentives for all industrial activities and to reduce the role of the state in controlling industrial investment. To achieve equal net incentives, there should be no tariffs or quantity restrictions on imports, no preferential or subsidized credit, and a distribution of the fiscal burden that is as neutral and as even as possible. If tariffs are unavoidable for fiscal reasons and/or if some moderate protection is to be accorded to industry "as a whole," one should aim at low and equal rates of effective incentives, which can be achieved by low uniform nominal tariffs and a uniform value-added subsidy for industrial exports.

Reducing state intervention in the process of allocating industrial investment is generally seen in terms of limiting the extent of future public investment in the industrial sector and of minimizing the structure of controls over private and direct foreign investment. Where public investments

in industry are to continue, project selection is to be based on financial viability, rather than on the multiple objectives that frequently characterize current public-investment decisions.

The laissez-faire position is quite clear and consistent in terms of its long-term objectives and the "ideal policy" it puts forward. There are, of course, difficult transition problems and there are disagreements on *how fast* it is wise to move from a highly "distorted" incentive structure and active public-investment policy to the "neutral" incentive structure and investment policy that is considered ideal. But there is no disagreement on the ultimate goal.

In contrast, the interventionist position is not characterized by an agreed long-term policy recommendation. In the low-income countries, considerable sympathy remains for generalized protection of the "infant" industrial sector coupled in many cases with support for continued intervention by the state in industrial investment. Concern over the absence of indigenous entrepreneurship is reflected in both active support of small- and medium-enterprise development in the industrial sector and by the persistence of high levels of investment by the state in large-scale industry.

In the middle-income countries a certain kind of interventionism still favors the establishment of basic or "heavy" industries. A variant of this argues for favorable treatment of producer-goods sectors as opposed to sectors producing consumer goods. This kind of attitude has traditionally had strong support in countries such as India, Pakistan, Turkey, and Egypt, and normally is accompanied by support for public investment in these sectors.

Another kind of interventionism is one that favors export industries. It is true that in many countries the incentives given to export industries only compensate exporters for tariffs and other distortions that have resulted in an anti-export bias of the incentive structure. But one suspects that in some cases "proexport" measures have reached the point where interventionism results, in some specific subsectors, in a structure of incentives that favors export expansion beyond what unaided markets would generate. An important check on such interventionism is of course the threat of foreign retaliation. Nonetheless arguments in favor of a neomercantilism inspired by the Japanese example and its Korean version can be found in an increasing number of semi-industrial economies, even though Japan and Korea have recently moved away from the more aggressive forms of export promotion. The degree of antiexport bias inherited from the past makes it very unlikely, however, that incentives can actually be turned around far enough to create an overall economy- or industry-wide proexport bias.

Finally, a third kind of interventionism, very similar to one existing in the advanced economies, advocates special support for high-technology

industries. In India this has led, until recently, to high protection for electronics with a special department responsible for the development of the domestic industry.[4] Brazil is another country that seems to have decided to accord special support and incentives to its electronics and telecommunications industry. Mexico devoted substantial attention in its recent national development plan to issues of technology policy and regulation of the acquisition of foreign technology; specialized quasipublic venture-capital firms to support R & D activity have been established in Korea and Spain.

Often these three kinds of arguments for intervention are present jointly in a given country. The situation is further complicated by the large share public enterprises have in the industrial sectors of most developing economies. These public enterprises usually benefit from preferential access to credit and favorable procurement procedures, although they also tend to be disprotected by price controls and uneconomic employment practices. To the extent that LDC governments intervene actively in the management of public and parastatal enterprises in order to achieve broader social objectives (and nearly all do) they are engaged in setting industrial policies that affect the conduct of both product and factor markets.

Last but not least, there are the interventions and incentive measures inherited from the past that still remain in force protecting various industries, including those producing all kinds of simple consumer goods, despite the fact that nobody is really at this point arguing at a conceptual level that they deserve special support. The net result of all these factors most often is an incredibly complex and varied incentive structure where newer interventions superimpose themselves on the older policy measures and where it is usually difficult to describe and evaluate the net impact of government policies. In Indonesia, for example, the catalog of price and nonprice interventions that apply to the industrial sector include: import and export check prices, import-sales taxes, customs duties, domestic-sales and excise taxes, firm-by-firm and specific commodity exemptions from import tariffs, quantitative restrictions on imports, import prepayment requirements, firm-specific tax exemptions, additional export duties, export quotas, a duty-drawback and export-certification scheme, export credits, and subsidies on certain intermediate inputs such as energy. The list, although long, is by no means exceptional. The net impact of these and similar interventions has been to create in most developing countries a structure of incentives that is characterized by wide dispersion both across sectors and among individual firms.

[4] A recent change in policy has resulted in reductions in tariffs and quantity controls on electronic products, and a shift in focus from regulatory to promotional action in support of the development of the sector.

Table 3 provides a summary of estimates of effective subsidies to value-added in a number of developing countries. The helter-skelter nature of incentives in clearly demonstrated by the wide range and high variance of effective subsidy rates in all countries. Data on effective rates of subsidy across firms within individual sectors would show even greater variation.

Nonetheless, despite the often chaotic and inconsistent nature of intervention and despite the difficulties in agreeing on what constitutes appropriate industrial policy, the interventionist camp is much stronger in the developing economies than it is in the advanced market economies. The laissez-faire position has very little support from domestic professional opinion. The pervasiveness of the interventionist view arises in large measure from the shared belief among economists living in and working on the developing countries that markets are insufficiently developed and/or not functioning well enough to be able to play a sufficiently effective role in allocating resources and directing investment in industry. A related concern which is by no means confined to the left end of the political spectrum, is that complete laissez-faire will tend to perpetuate "backward" industrial structures

TABLE 3

EFFECTIVE RATES OF SUBSIDY IN SOME DEVELOPING COUNTRIES (PERCENT)

	Average all manufacturing	Sectoral range		Standard deviation
		Minimum	Maximum	
Argentina (1977)[a]	46	−15	130	46.22
Brazil (1980)[a]	41	−43	172	50.56
Colombia (1979)[a]	56	25	127	27.76
Egypt (1980)	90	−29	355	133.40
Indonesia (1975)	30	−35	4,318	425.50
Jamaica (1978)[a]	50	−35	195	54.65
Jordan (1979)[a]	55	4	327	72.51
Korea (1968)	−7	−30	159	37.72
Malaysia (1980)[a]	27	−179	172	173.21
Mexico (1979)	11	−28	219	52.67
Nigeria (1979/80)[a]	40	−38	2,079	385.50
Philippines (1974)[a]	59	−27	300	75.02
Thailand (1983)[a]	136	−38	2,734	334.89
Turkey (1980)[a]	38	−2	110	28.46
Sri Lanka (1979)	38	−591	400	72.12

Note. The effective rate of protection is a ratio that measures value-added at domestic prices relative to value-added at world prices.

Source. Balassa, et al. (1982); World Bank Reports.

[a] Denotes effective rate of protection.

and specialization in industries likely to suffer from terms-of-trade and relative-productivity losses. These "dynamic" considerations are believed to outweigh any static "efficiency losses" associated with interventionist policies.

Within the interventionist camp itself the basic division of opinion rests on the degree of activism with which the government is expected to engage in the process of market intervention. At the risk of some simplification, it is possible to outline two basic approaches to industrial-policy formation. The first is market-oriented in the sense that the policymaker attempts to identify the nature of any market failure justifying intervention and then tries to design an instrument as narrowly targeted as possible. Clearly, this position departs very little from the orthodox applied-welfare economics of policy selection and implementation. Economists devote substantial attention to the "theory of domestic distortions," which attempts to set out a hierarchy of interventions for dealing with various objectives of government policy and problems of market failure.[5] The basic tenet of this market-oriented approach is that markets can be improved and directed; that the basis for intervention must be primarily the correction of an identified market failure (distortion). Selection of policy instruments is then important, because one of the objectives of policy formation is to minimize the "by-product distortions" that occur as a result of attempts to correct or moderate the effects of market failure.

Set against the market-oriented view is a non-market-oriented position on intervention. The central proposition of this approach is that markets and the decentralized process of decision making cannot be relied upon to achieve the social and economic goals associated with industrialization. Rather, planning, quantity targets, and bureaucratic decision making are seen as essential elements of the process of industrial development. In its extreme form, this position asserts not only that market processes do not work at present levels of development but that they cannot be made to work. Policies designed to foster particular industries, despite considerable evidence of the cost penalties of local production, are a frequent manifestation of this approach.

4. SOME GUIDELINES FOR THE FUTURE

It is difficult to enumerate the elements of an appropriate industrial policy for all developing countries. As we noted above, the needs and motivations of policymakers in the low-income countries can be quite different from those of their counterparts in the newly industrialized countries. Nevertheless, there are some guidelines for policy formation that cut across the spectrum of income differentials and levels of industrial

[5] See, for example, Corden (1974).

development, and that to a lesser degree transcend the interventionist/laissez-faire dichotomy. In general, these guidelines are market-oriented. They seek to identify problems with the malfunctioning of markets, to specify interventions that are appropriate to offset market failures, and, in general, to strengthen the working of the market mechanism.

First, there is a critical need in many LDCs to take a comprehensive view of the impact of government intervention on the industrial sector. The current policy regime in many developing countries is full of contradictory policy instruments intended to offset distortions that have developed both as a result of the ad hoc manner in which incentives were adopted and applied and as a result of the multiple objectives that were frequently associated with public industrial investment. In countries with large public industrial sectors such as Egypt, Pakistan, and India, the control of public-sector prices for both producer and consumer goods has resulted in increasing dualism between public and private sectors. In the public sector, incentives to industrial production conferred by the structure of protection are often offset by the effects of price control, while in the private sector the incentive effects of trade interventions tend to be reinforced by the access of firms to producer goods from the public enterprises at low controlled prices. In these circumstances, policymakers are confronted with the irony of public enterprises making large financial losses in sectors in which private firms earn substantial rents, while financial returns in both cases are an inadequate guide to international competitiveness and economic efficiency.

Clearly, prior to any new action, whether to rationalize the number and structure of interventions in the industrial sector or to eliminate them, there is a need to understand the net effect of current policy instruments in many countries. In this context, the continuing emphasis on studies of industrial and trade incentives should be supported by adherents of both the laissez-faire and interventionist positions. In most developing countries the net effect of the structure of incentives on domestic relative prices is still only imperfectly understood and the need to correct irrational and often contradictory incentives is the first item on the industrial-policy agenda.

A second area where there may be some degree of agreement between the views of laissez-faire and interventionist policymakers is on the need to moderate the antiexport bias of many trade regimes. They are likely to differ, however, on the mechanisms by which incentives to export are to be increased. The laissez-faire position generally emphasizes the need to reduce the level of protection to import-competing industries, while interventionists are more likely to emphasize the need for direct subsidization of exports. In theory, both approaches can lead to similar results in terms of the

structure of net incentives. In practice, however, there are important differences. Domestic political considerations often make an "export-first" approach easier to implement than comprehensive trade liberalization. On the other hand, the current world trading environment is not favorable to the export-first approach. As the industrial countries experience increasing competition from LDC exporters, the level of scrutiny given to incentive structures in the exporting countries for "unfair competitive practices" will increase. Developing countries must be careful to reach the desired incentive structures in a way that is as consistent as possible with the legal practice and political mechanisms of the importing countries. A realistic exchange-rate policy responding promptly to changes in domestic and world markets remains the most effective tool for promoting overall efficiency and competitiveness. Other incentives can complement such a policy but cannot substitute for it.

A final element of industrial policy for which there may be a broad consensus is the need for comprehensive public-sector reform. In this area, as in trade policy, differences among policymakers and analysts are more likely to center on the rationale for reform and the extent of the reform process rather than on the need for reform itself. There is widespread dissatisfaction with the economic performance of public industrial firms in most of the economies in which the public sector plays a major role. The financial position of many public and parastatal enterprises has deteriorated to the point where they are a constant source of dissaving in the public sector. The poor financial performance of these firms often has its origin both in the bureaucratic organization of the enterprise with corresponding lack of managerial authority and incentives, and in the widespread control of such basic economic decisions as pricing and employment practices by the central government. There are, however, cases of extremely successful public industrial enterprises in developing countries. One such example is the Pohang Iron and Steel Corporation in Korea, which achieved dramatic factor-productivity growth in record time.[6]

We take the view that a moderate and generally uniform structure of incentives to industry is appropriate, but that it can be supplemented by selective promotion of individual sectors in order to achieve international competitiveness. The key characteristics of selective promotion are that it must be strictly limited to a small number of sectors, that it must be limited in duration, and that, to the maximum extent possible, the instruments chosen must be designed to minimize adverse side effects.

We have argued that the costs of generalized protection of the industrial

[6] See Westphal and Dahlman, forthcoming.

sector have become exceedingly high for many countries. The key goal of medium-term industrial policy for these countries is therefore to increase the productivity of existing industry and to promote those activities that can rapidly achieve competitiveness at international prices. This objective is linked to the acquisition of mastery over industrial technology, since both the level of technology and the efficiency with which it is used determine the total factor productivity of industry.

There is some evidence to suggest that where selective promotion, in the sense in which we have defined it, has been attempted in developing countries, particularly in conjunction with exposure to external competition, the rates of productivity change, both in the promoted industries and more generally, have exceeded those of countries with comparable levels of income and industrial development.[7] If this is in fact the case, these variations in the acquisition of technological capability may reflect important potential sources of market failure. Capital markets in most developing countries do not encompass lending to firms developing intangible assets. Thus firms wishing to carry out such innovations are largely dependent on self-finance. Moreover, knowledge is an intangible asset over which it is difficult to maintain proprietary control. Workers move, procedures are duplicated, and technological choices are copied, all without compensation to the original investors. These market failures clearly call for some, albeit limited, government intervention.

Equally as important as the need to be selective is the need to enforce rigorously a limit to the duration of incentives. As the basis for selective promotion is primarily a belief in the inability of private borrowers to finance the acquisition of knowledge, the nature of the market failure itself militates against continuing the process of subsidization indefinitely. The lessons of the Japanese and Korean experiences appear to indicate that the benefits of selective promotional incentives accrue only when those incentives are regarded as temporary.

It should be emphasized at this stage that there is nothing in our argument to indicate that trade protection is the appropriate instrument to employ in attempting the selective encouragement of specific industries. The infant-industry argument is most frequently framed in terms of protection from international competition; but alternative forms of support more directly linked to the capital market and to the acquisition of technological capability would be preferable. Explicit subsidies also have the advantage of being more visible and can be more easily withdrawn if the expected productivity gains do not materialize. This requires, however,

[7] See Westphal (1982).

a more comprehensive understanding of the process of productivity change in new industries (or in industries undergoing rapid change in their economic environment in the case of restructuring) than is currently available. Thus, a high priority for policymaking in the area of promoting productivity change is the acquisition of additional knowledge of the process itself.

Finally, the considerations outlined above underline the difficulty of trying to propose generally applicable rules or guidelines. A lot depends on the stage of development and the degree of industrialization, the existence and strength of local entrepreneurial talent, and the competence and honesty of public administration. What was necessary and beneficial for Korea in the 1960s is probably no longer necessary or optimal in the 1980s. Once gross distortions and overall antiexport bias are corrected and the worse resource drains are eliminated, each country has to work out a specific approach to its industrial policy ranging from almost complete laissez-faire to interventionism based on selective promotion, depending on its history, sociology, and level of development.

The present is still characterized by so many obvious inconsistencies and inefficiencies that in most cases there is no need to agree fully on an ideal policy blueprint prior to making progress toward greater overall rationality in incentives and government actions. The debate on what is ideal will and should continue but should not be an obstacle placed in the way of interim reforms, which can improve significantly on existing conditions.

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